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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,942	08/21/2003	Yasuo Isumi	GY0310US	1297

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EXAMINER	
CHARIOUI, MOHAMED	
ART UNIT	PAPER NUMBER
2857	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,942	ISUMI ET AL.	
	Examiner	Art Unit	
	MOHAMED CHARIOUI	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 July 2008*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Ex Parte Quayle

Drawings

1. **FIG. 13** is objected to because boxes are not labeled, The Examiner directs the applicant to 37 C.F.R. 1.84(n) and 1.84(o) which state, "Graphical drawing symbols may be used for conventional elements when appropriate" while "[o]ther symbols which are not universally recognized may be used, subject to approval by the Office" and that "[s]uitable descriptive legends may be used subject to approval by the Office, or may be required by the examiner where necessary for understanding of the drawing". Since the drawing in Figure 13 does not contain conventional elements, the Examiner may require descriptive legends for better understanding of the drawings. See MPEP 608.02.

FIG. 13 is objected to because print cannot be read.

Claim Objections

2. **Claims 1-10** are objected to because of the following informalities:

In claim 1, line 5, change "the frequency distributions" to –frequency distributions- Appropriate correction is required.

Claim 11 is objected to because of the following informalities:

In claim 11, line 7, change "each of the frequency distributions" to -frequency distributions-. Appropriate correction is required.

Claim 12 is objected to because of the following informalities:

In claim 12, line 5, change "the frequency distributions" to –frequency distributions-. Appropriate correction is required.

In claim 12, line 31, change “judging step are judged” to –judging step is judged-. Appropriate correction is required.

Claims 13-17 are objected to because of the following informalities:

Claim 13 recites the limitation "each component" in line 14. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claims 18-28 are objected to because of the following informalities:

In claim 18, lines 7-8, change “each of the frequency distributions” to -frequency distributions-. Appropriate correction is required.

Claims 29-36 are objected to because of the following informalities:

In claim 29, line 12, change “each of the frequency distributions” to -frequency distributions-. Appropriate correction is required.

Claim 37 is objected to because of the following informalities:

In claim 37, lines 32-33, change “each of the frequency distributions” to -frequency distributions-. Appropriate correction is required.

Claim 38 is objected to because of the following informalities:

In claim 38, lines 35-36, change “each of the frequency distributions” to -frequency distributions-. Appropriate correction is required.

Allowable Subject Matter

3. **Claims 1-38** would be allowable if the objections listed above are overcome.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 1 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a pass/fail judgment device which takes the form of pass/fail objects as a pass/fail judgment factor, and which is used to detect a defective unit in product inspection, including a statistical parameter computing unit for computing a center of distribution and distribution parameters that vary in accordance with a breadth of a distribution for said variables with respect to either or both of said pass category and said fail category; a threshold determining unit for determining a threshold for providing a pass/fail judgment based on the value of a variable and giving a specific distribution probability that is based on at least one of a rate of flowout in the fail category, which represents a number of pass/fail judgment objects that are actually in the fail category and that are judged as ~ passed, and a rate of overcontrol in the pass category, which represents a number of pass/fail judgment objects that are actually in the pass category and that are judged as being failed, relative to said center of distribution and said distribution parameters; a parameter information acquiring unit for acquiring a plurality of pieces of parameter information on one or more pass/fail judgment objects according to data of a normal distribution; and a pass/fail judging unit for comparing the value of variables obtained by substituting the parameter information into said discriminant function with said threshold and for thereby providing a pass/fail judgment for the one or more pass/fail judgment objects; wherein the overcontrol and flowout are separated having the normal distribution, wherein the overcontrol and flowout are judged based on the data of the normal distribution, in

combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 11 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a pass/fail judgment method taking the form of pass/fail objects as a pass/fail judgment factor for detecting a defective unit in product inspection, the method including computing a center of distribution and distribution parameters that vary with a breadth of a distribution for said variables with respect to either or both of said pass category and said fail category; determining a threshold for providing a pass/fail judgment based on the value of a variable value and giving a specific distribution probability based on at least one of a rate of flowout in the fail category, which represents a number of pass/fail judgment objects that are actually in the fail category that are judged as being passed, and a rate of overcontrol in the pass category, which represents a number of pass/fail judgment objects that are actually in the pass category that are judged as being failed, relative to said center of distribution and said distribution parameters; acquiring a plurality of pieces of said parameter information on one or more pass/fail judgment objects according to data of a normal distribution; and comparing the value of variables obtained by substituting the parameter information into said discriminant functions with said threshold; and displaying a pass/fail judgment for the one or more pass/fail judgment objects based on the comparing step; wherein the rate of overcontrol and flowout are separated having the normal distribution; and wherein the pass/fail judgment are judged based on the

normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 12 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a pass/fail judgment method taking the form of pass/fail objects as a pass/fail judgment factor for detecting a defective unit in product inspection, the method including a threshold determining step for determining a threshold for providing a pass/fail judgment based on a value of a variable representing a specific distribution probability based on at least one of a rate of flowout in the fail category, which represents a number of pass/fail judgment objects that are actually in the fail category, and that are judged as being passed, and a rate of overcontrol in the pass category, which represents a number of pass/fail judgment objects that are actually in the pass category, and that are judged as being failed, relative to said center of distribution and said distribution parameters; and a pass/fail judging step in which the value of variables obtained by substituting the parameter information into said discriminant functions are compared with said threshold, and a pass/fail judgment for the one or more pass/fail judgment objects is displayed based on the comparison with said threshold; wherein the rate of overcontrol and flowout are separated having the normal distribution; and wherein the pass/fail judging step is judged based on the normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 13 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a multivariate statistics analyzer

which is capable of communication of data with the outside through a communication interface and executes a multivariate analysis program under the control of a predetermined operating system including a discriminant function computing portion which eliminates multicolinearity, .gives variables used to separate frequency distributions of a pass category and a fail category from a plurality of pieces of information which make pass/fail judgment factors and pass/fail judgment result information, wherein each of the frequency distributions of the pass category and the fail category has a shape of a normal distribution, and further computes discriminant functions based on said parameter value data; a statistical parameter computing portion which computes a center of distribution parameters and that vary in accordance with a breadth of a distribution for variables with respect to either or both of a pass category and a fail category, and the mean and standard deviation in frequency distributions of said pass category and said fail category with respect to said discriminant functions; and a threshold determining portion for determining a threshold for providing a pass/fail judgment based on the value of a variable defined by a specific distribution probability based on at least one of a rate of flowout in the fail category, which represents a number of pass/fail judgment objects are actually in the fail category, and that are actually judged as being passed, and a rate of overcontrol in the pass category, which represents a number of pass/fail judgment objects that are actually in the pass category, and that are actually judged as being failed, relative to said center of distribution and said distribution parameter, and the threshold determining portion further performs the operations of acquiring said discriminant function data, said parameter value data, and

pass/fail judgment result data, generating a histogram corresponding to a pass/fail judgment result on a category-by-category basis, computing a mean and a standard deviation of each category in the generated histogram, determining the threshold of a discriminant function corresponding to a specified rate of flowout which is set for the fail category and indicates the range in which defective units are let out, based on the mean and standard deviation computed in the fail category and the rate of flowout; and a pass/fail judgment display portion configured to display a pass/fail judgment for the one or more pass/fail judgment objects based on the threshold determined by the threshold determining portion; wherein the overcontrol and flowout are separated having the normal distribution; and wherein the overcontrol and flowout are judged based on the data of the normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 18 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a quality control apparatus which takes the form of pass/fail objects as a pass/fail judgment factor and which is used to detect a defective unit in product inspection, including an input unit configured to receive at least one of a rate of flowout in the second category, which represents a number of objects that actually are in the second category that are actually classified as being in the first category, and a rate of overcontrol in the first category, which represents a number of objects that actually are in the first category that are actually judged as being in the second category; a calculation unit configured to calculate a discriminate function to discriminate between one or more objects classified in the first category from one or

more objects classified in the second category based on the at least one of the rate of flowout in the second category and the rate of overcontrol in the first category received by the input unit and based on at least one of the first and second probabilities computed by the statistical computing unit; a judging unit configured to determine whether one or more objects should be classified in one of the first and second categories based on the discriminate function calculated by the calculation unit; and a communication unit configured to communicate whether the object is classified in one of the first and second categories based on the determination of the judging unit; wherein the judging unit has a standard deviation based on a normal distribution of the objects wherein the overcontrol and flowout are separated having the normal distribution; and wherein the overcontrol and flowout are judged based on the data of the normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 29 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a computer-implemented quality control method taking the form of pass/fail objects as a pass/fail judgment factor for detecting a defective unit in product inspection, the method including receiving a rate of flowout in the second category, which represents a number of objects that should be classified in the second category, but are actually judged as being classified in the first category relative to said center of distribution and said distribution parameters; receiving an a rate of overcontrol in the first category representing a number of objects that should be classified in the first category, but are actually judged as being classified in

the second category relative to said center of distribution and said distribution parameters; calculating a discriminate function to discriminate between one or more objects that should classified in the first category from one or more objects that should be classified in the second category based on the first and second probability distributions computed by the statistical computing unit and based on at least one of the received rate of flowout and the received rate of overcontrol; determining whether one or more objects should be classified in one of the first and second categories based on the discriminate function calculated by the calculation unit; and communicating the determination of whether the one or more objects are classified in one of the first and second categories to an operator; wherein the rate of overcontrol and flowout are separated having a normal distribution; and wherein the overcontrol and flowout are judged based on the data of the normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 37 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a computer-implemented quality control apparatus used to detect a defective unit in a product inspection, including an input unit configured to receive a rate of flowout in the defective category, which represents a number of objects that are actually in the defective category by the statistical computing unit, but and that are judged as being non-defective and a rate of overcontrol in the non-defective category, which represents a number of objects that are actually in the non-defective category by the statistical computing unit, and that are judged as being defective, the received rate of flowout and the received rate of

overcontrol including a visual observation by an operator of an actual orientation of one component of the object relative to another component of the object; a calculation unit configured to calculate a discriminate function to discriminate between defective and non-defective objects based on the non-defective category and defective object probability distributions computed by the statistical computing unit and based on the feedback data received by the input unit, the discriminate function being different from a midpoint between a mean value of the first probability distribution and a mean value of the second probability distribution wherein each of the frequency distributions of the non-defective category and the defective category has a shape of a normal distribution; a judging unit configured to determine whether the one or more objects should be classified in one of the defective or non-defective categories based on the discriminate function calculated by the calculation unit; and a display unit configured to display whether the one or more objects are classified in one of the defective or non-defective categories based on the determination of the judging unit; wherein the rate of overcontrol and the rate of flowout are separated having the normal distribution; and wherein the overcontrol and flowout are judged based on the data of the normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

Claim 38 is allowed because the closest prior art, Okumura et al. (U.S. Pub. No. 2003/0043939) fails to anticipate or render obvious a computer-implemented quality control method taking the form of pass/fail objects as a pass/fail judgment factor, and used to detect a defective unit in product inspection, the method including receiving an

rate of flowout in the defective category, which represents a number of objects that are actually in the defective category, and that are judged as being non-defective, the received rate of flowout including a visual observation by an operator of an actual orientation of one component of the object relative to another component of the object; receiving a rate of overcontrol in the non-defective category, which represents a number of objects that are actually in the non-defective category, and that are actually in the defective category, the received rate of overcontrol including a visual observation by an operator of an actual orientation of one component of the object relative to another component of the object; calculating a discriminate function to discriminate between one or more objects classified in the non-defective category from one or more objects classified in the defective category based on at least one of the received rate of flowout and the received rate of overcontrol and based on the computed non-defective and defective object probability distributions, the discriminate function being different from a midpoint between a mean value of the computed non-defective object probability distribution and a mean value of the computed defective object probability distribution wherein frequency distributions of the non-defective category and the defective category has a shape of a normal distribution; determining whether one or more objects should be classified in one of the defective or non-defective categories based on the calculated discriminate function; and displaying an image that illustrates whether the one or more objects are classified in one of the defective or non-defective categories based on the determining step wherein the rate of overcontrol and the rate of flowout are separated having a normal distribution; and wherein the overcontrol and flowout are judged based

on the data of normal distribution, in combination with the rest of the claim limitations as claimed and defined by the Applicant.

4. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Contact information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohamed Charioui whose telephone number is (571) 272-2213. The examiner can normally be reached Monday through Friday, from 9 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mohamed Charioui

11/7/08

/Edward Raymond/

Primary Examiner, Art Unit 2857